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Patent and Trademark Office**

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*On*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/004,544    01/08/98    TU    K    CT-269

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EXAMINER

LEE, R

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 10/11/00

14

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
09/004,544

Applicant(s)  
Tu et al

Examiner  
Richard Lee

Group Art Unit  
2613



☒ Responsive to communication(s) filed on Sep 13, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-23 is/are pending in the application.

Of the above, claim(s) 5-23 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-4 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Aug 7, 1998 is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. Applicants' election of claims 1-4 with traverse is acknowledged. The Examiner has carefully reviewed the applicants' arguments from the response to the restriction requirement filed September 13, 2000, but still maintains the restriction requirement for the following reasons. The Examiner wants to firstly point out and remind the applicants that the inventions of Groups I to III are distinct from each other if it can be shown they are not disclosed as capable of use together and they have different modes, different functions, or different effects (see MPEP 806.04, MPEP 808.01). Regarding the applicants' arguments that Groups I and II are related because they both perform IDCT calculations and that the claims of Group I are not independent and distinct from the claims of Group II from the response to the restriction requirement filed September 13, 2000, the Examiner wants to point out that Groups I and II are in fact different and distinct inventions since claim 1 from Group I, for example, involves an apparatus for performing **dequantization** of an encoded video data stream while claim 5 from Group II, for example, involves an apparatus for performing **IDCT** on dequantization video signal data. In addition, the dequantization apparatus of claim 1 involves the **multiplication** of a scale, a non-zero IDCT coefficient matrix, and a modified standard quantization matrix, while the IDCT apparatus of claim 5 involves performing IDCT row and column calculations on the dequantization video data **without multiplying** the dequantization video signal by a diagonal cosine matrix. Consequently, Groups I and II are not disclosed as capable of use together and have different modes of operation, different functions, and different effects. Regarding the applicants' arguments that claim 1 is broad enough to encompass any system, whether the dequantization and IDCT calculations are performed

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sequentially, in parallel, or in any other way and that claim 1 is generic with respect to the Group III claims, the Examiner respectfully disagrees. Claim 1 from Group I, for example, involves an apparatus for performing only **dequantization** of an encoded video data stream while claim 23 from Group III, for example, involves a method for performing **dequantization and IDCT calculations in parallel**. Claim 23 further claims performing IDCT butterfly calculations on the dequantization output data. Therefore, since claim 1 provides dequantized data and claim 5 provides IDCT data from performing dequantization and IDCT calculations in parallel, the two groups are directed to independent and distinct inventions. Groups I and III are further distinct from each other since they are not disclosed as capable of use together and they have different modes, different functions, and different effects. The restriction requirement dated 8/24/00 is thereby deemed proper for the above reasons. Therefore, claims 1-4 will now be examined while claims 5-23 will be withdrawn from further consideration. The restriction requirement is hereby made **FINAL!**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Bhaskaran et al (5,467,131).

Bhaskaran et al discloses a method and apparatus for fast digital signal decoding as shown in Figures 1-3, and 6, and the same apparatus and method as claimed in claims 1-4 for performing dequantization of an encoded video data stream (see 14 of Figure 1), comprising the same means (see columns 5-6) for receiving a quantization matrix corresponding to the encoded video data stream; means (i.e., scale factor K, see column 9, lines 13-40) for receiving a scale representing a compression ratio of the encoded video data stream; means (i.e., H[], see columns 5-6) for receiving a non-zero IDCT coefficient matrix corresponding to a block of encoded video data; means for multiplying a diagonal cosine matrix and the standard quantization matrix (i.e., S[] premultiplied by a diagonal matrix D, see column 5, line 60 to column 6, line 13, column 9, lines 28-40) to create a modified standard quantization matrix; and means for multiplying the scale (b is scaled by scale factor K, see column 9, lines 13-27), the non-zero IDCT coefficient matrix (H[], see columns 5-6) and the modified standard quantization matrix (i.e., S[], wherein  $Y[] = S[] \times H[]$ , S[] = b x q x diagonal matrix, S[] is modified standard quantization matrix, b is scaled by scale factor K, q is standard matrix, H[] is non-zero coefficient matrix, see columns 5-6, column 9, lines 13-40).

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4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Feig et al (5,523,847 and 5,909,254) disclose a digital image processor for color image compression.

Watanabe discloses an image data compressing apparatus.

Urano et al discloses a bit rate conversion circuit for a compressed motion video bitstream.

Wheeler et al discloses a method and apparatus for performing fast division.

Filor et al discloses a decoder and method for decoding of coded picture, video and film information.

Malladi et al discloses a micro-architecture of video core for MPEG-2 decoder.

Niesen discloses a method and system for three dimensional compression of digital video signals.

5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:


(703) 308-6306 (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

  
RICHARD LEE  
PRIMARY EXAMINER

Richard Lee/rl

10/6/00 